

Having thus described the invention, what is claimed is:

1. A method for determining the location of a mobile station in a wireless telecommunication system comprising the steps of:
  - determining the latitude and longitude of the mobile station;
  - receiving data from the mobile station identifying the barometric pressure at the mobile station;
  - measuring the barometric pressure at a known elevation;
  - utilizing the measured barometric pressure and the received barometric pressure to identify the actual altitude of the mobile station;
  - utilizing the latitude and longitude of the mobile station to determine the altitude at ground level of the exact location of the mobile station; and
  - utilizing the ground level altitude at the location of the mobile station and the identified actual altitude of the mobile station to determine the altitude of the mobile station relative to ground level at the latitude and longitude of the mobile station.
2. A method for determining the physical location of an emergency call originated by a mobile station comprising the steps of:
  - identifying that a call originated by the mobile station is an emergency call;
  - receiving data from the mobile station identifying the latitude and longitude of the mobile station;
  - receiving data from the mobile station identifying the barometric pressure measured at the mobile station;
  - measuring the barometric pressure at a physical location having a known altitude;
  - determining the altitude of the mobile station from the measured barometric pressure and the received barometric pressure;
  - determining the altitude of the mobile station relative to ground level at the position of the received latitude and longitude.

3. A method for determining the altitude within a high-rise building of a cellular phone user from whom a call has been placed comprising, in combination:

receiving data from the cellular phone identifying the barometric pressure at the cellular phone;

determining the latitude and longitude of the cellular phone;

determining the altitude at ground level of the high-rise building located at said latitude and longitude where the call originated; and

determining, from the altitude at ground level and the barometric pressure at the cellular phone, the altitude of the cell phone relative to the ground level of the high-rise building from which the call originated.

4. The method in Claim 3 wherein said altitude at ground level of the high-rise building where the call originated is determined by table lookup using the latitude and longitude received from the cellular phone.

5. The method of Claim 2 wherein the ground level altitude at the latitude and longitude received from the mobile station is determined by table lookup.

6. The method of Claim 1 wherein the ground level altitude at the latitude and longitude received from the mobile station is determined by table lookup.

7. The method of Claim 1 wherein the known location where the barometric pressure is measured is a location sufficiently close to the location of the mobile station that the barometric pressure at the same altitude would be substantially the same.